THE INSTITUTE OF PHYSICS

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BULLETIN

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CHARLES SYKES, D.Sc., F.Inst.P., F.R.S.

President-Elect

Dr. Charles Sykes, who has been elected President of the Institute for the year beginning 1 October, 1952, graduated in the University of Sheffield in 1925 with first-class honours in physics. After the award of a Ph.D. for research in metallurgy, he was appointed in 1928 to the research staff of Metropolitan-Vickers Electrical Co. Ltd., at Manchester. While working as a physicist on problems related to industrial subjects, he began in 1932 some academic work with Professor W. L. (now Sir Lawrence) Bragg, then Langworthy Professor of Physics in the University of Manchester. In 1936 Dr. Sykes was awarded his D.Sc. degree.

Dr. Sykes was appointed Superintendent of the Metallurgy Department of the National Physical Laboratory in 1940 and later became Superintendent of the Terminal Ballistics Department of the Armament Research Establishment at Fort Halstead, Kent. The important problems dealt with by his department included the investigation of armour penetration and the design of new types of penetrating projectiles. In 1943 he was elected to Fellowship of the Royal Society.

In 1944 Dr. Sykes became Director of Research of Thomas Firth and John Brown Ltd., of Sheffield. The firm's laboratories are the largest and best equipped in the steel industry. As well as controlling the research of a large technical staff, Dr. Sykes has published papers dealing with the importance of hydrogen in steel and the development and properties of materials for high temperature service. He is now managing director of the company.

Elected to Fellowship of the Institute in 1935, Dr. Sykes served on the Board from 1940 to 1946.

THE SUPPLY OF PHYSICISTS

Interesting and important reference to the supply of physicists is contained in the recently published Fifth Annual Report of the Advisory Council on Scientific Policy (1951–52) (London: Her Majesty's Stationery Office. Cmd. 8561), price sixpence. The following are extracted from the summary of conclusions:

(i) We use the term "scientist" to signify a man or woman trained in fundamental or applied science (which includes engineering) to the level of a university degree or an equivalent qualification.

(ii) There is a pressing need to increase both absolutely and relatively the number of scientists in our industries.

(iii) There is an increasing trend towards the employment of scientists in managerial and executive posts; the momentum within this trend is likely to gather strength.

(iv) There is likely to be a long-term shortage of practically all kinds of scientists; every effort should be made to increase the supply, with particular emphasis on chemists, chemical engineers, electrical engineers, mechanical engineers and physicists.

(v) At present the supply of civil engineers, geologists and metallurgists appears to be equal to the demand.

(vii) There is much evidence for the view that many students with the ability to reach a university standard leave school before the age of 17. The first

step is to get more of these to remain at school until nearly 18.

(viii) We do not advocate any diminution in the importance of the humanities in our universities, but further consideration should be given to the fact that there is a shortage of science graduates, whereas arts graduates find it difficult to obtain the employment they want.

(ix) The output of scientists from technical colleges can be increased relatively quickly, provided employers encourage the flow of students.

(x) A further expansion of the facilities for scientific education in the universities is clearly needed.

(xi) The scientific attainments of present-day science graduates are adequate. On the other hand the education of scientists, particularly in the technical colleges, is frequently too narrow.

(xii) There is an unsatisfied demand for men with scientific training who possess both good academic qualifications and good personality.

(xiii) More men possessing the highest qualities of leadership and personality, and at the same time equipped with a scientific training, must be encouraged to the front. Such men should be employed in top-level posts in industry and in the Civil Service.

(xiv) As the number of men possessing high qualities of intellect and leadership is limited, a substantial increase in the number of those with such qualities who take up science can only be at the expense of other disciplines; this is not likely to happen without a change in the climate of opinion about the prestige of science.

(xv) A high proportion of the best boys in the grammar schools take up science.

(xvi) Science does not attract as many boys of outstanding ability in the public schools as is desirable in the present national interest, and as would be attracted if it were not for certain counteracting but out-of-date influences.

(xvii) The inadequate supply of good science teachers is giving serious concern. Special measures may have to be taken to increase their numbers even at the expense of what may appear to be more immediate demands for scientists.

An appendix to the report deals more specifically with the supply of graduates in various sciences. The reference to physics is as follows:

DEMAND IN EXCESS OF SUPPLY

Physicists

In their original report the Physics Sub-Committee of the Technical Personnel Committee stated that they expected the supply of physicists to fall below demand until 1952, when it was anticipated that the situation would be reversed. The sub-committee, therefore, sounded a "note of warning against an over-rapid expansion of our physics schools." This expected decline in demand has not occurred, partly because of the re-armament programme but also because employers are realizing more and more the advantages of employing men with a sound basic training in physics. A man so trained can easily acquire other specialities, whether they be in engineering or management studies. To-day, therefore, neither the sub-committee, which have reconsidered the matter, nor the Committee on Scientific Man-power see any reason to suppose that the supply of physicists will exceed demand. For some years there will be a particular shortage of physicists qualified to undertake defence work in the thermionic valve field. There will also be a continuing shortage of physicists for science teaching in the schools.

PROCEEDINGS OF THE THIRTY-SECOND ANNUAL GENERAL MEETING

The Thirty-second Annual General Meeting of the Institute was held on 5 June, 1952, at the Institute's House. In the unavoidable absence of the President, the Chair was taken by Professor E. G. Cox (Vice-President). A quorum being present, the secretary read the notice convening the meeting. The Minutes of the previous Annual General Meeting held on 16 May, 1951, were read and signed by the chairman.

In the absence of the honorary treasurer, at present in America, the honorary secretary, Dr. B. P. Dudding, moved the adoption of the accounts and balance sheet for the year 1951. This was seconded by Major E. H. W. Banner (Fellow) and the proposal for adoption carried unanimously. Dr. Dudding moved the adoption of the report of the Board for the year 1951; the motion for adoption was seconded by Mr. D. T. R. Deighton (Associate) and carried unanimously. The chairman announced that in accordance with Article 55 the Board had appointed Mr. R. G. Wood (Fellow) to fill the casual vacancy (until 30 September, 1952) for an Ordinary Member of the Board which was caused by the retirement of Dr. F. P. Bowden, owing to pressure of work, in October 1951.

The chairman, having received the report of the scrutineers declared the following elected (or re-elected) to fill the vacancies which will occur on 30th September.

President: Dr. C. Sykes.
Vice-Presidents: Mr. O. W. Humphreys, Dr. T. L. Ibbs.
Honorary Treasurer: Dr. S. Whitehead.
Honorary Secretary: Dr. B. P. Dudding.
Ordinary Members of the Board: Mr. H. Barrell, Dr. N. A. De Bruyne, Dr. W. H. Taylor, Mr. R. G. Wood.

Having received the scrutineers' report on the ballot for the election of an Honorary Fellow, the chairman announced that Sir Owen W. Richardson had been elected an Honorary Fellow of the Institute.

Messrs. Knox, Cropper & Co. were re-elected auditors for the year 1953.

A hearty vote of thanks to the President and honorary officers was proposed by Mr. H. Barrell (Fellow), seconded by Mr. H. H. Watson (Fellow) and carried with applause. Particular mention was made of the services rendered to the Institute by the retiring President (Professor Curtis) and by Mr. E. R. Davies, who is retiring after nearly seven years' service as honorary treasurer.

The chairman moved votes of thanks which were carried with applause, to the honorary officers of the branches and groups at home and overseas, and to the many bodies who have allowed the use of their rooms for meetings.

This concluded the business of the meeting.

NOTICES TO MEMBERS

Graduateship Examination: Deferment from Military Service

The Ministry of Labour has now agreed to the deferment of students following courses for the Institute's Graduateship Examination. The arrangements will apply to full-time and to part-time students, including those who wish to study for a further year after completing the course for the Higher National Certificate in Applied Physics.

Part-time students will be required to satisfy the Ministry in respect of the usual conditions relating to the nature of the practical training afforded by their employment. In addition, applicants for deferment on the grounds of preparation for the Graduateship Examination must submit a certificate from The Institute of Physics confirming that they are following a course of practical training and theorectical study approved by the Institute. This requirement must also be satisfied by those who apply for further deferment after obtaining the Higher National Certificate in Applied Physics. A condition of issue of a certificate by the Institute to any candidate will be that he is studying in a college which has been recognized by the Institute for the purpose of its membership regulations.

Applications for deferment are to be made on form N.S. 294 which is obtainable from any local office of the Ministry of Labour and National Service.

Graduateship Examination Papers

Copies of the papers set in the 1952 Graduateship Examination are now available from the Institute at 3s. a set. In addition to the compulsory papers in Physics (three theoretical papers and a practical examination) and Mathematics (two papers), the following papers, from which a candidate for the full examination is required to select one, were set this year: Electronics, Spectroscopy, X-rays, More Advanced Physics and Mathematical Physics. The General paper, for candidates not possessing adequate evidence of general education, is included in the set. Acoustics, Statistics, High-Vacuum Technology and Temperature Measurement are other subjects from which candidates may take their selected paper but none of these was selected this year.

Copies of single papers cannot be supplied.

Utilization of Science: House of Lords Debate

Viscount Samuel, President of the Parliamentary and Scientific Committee, initiated a debate in the House of Lords on 12th June, on the utilization of the results of scientific research by industry and agriculture. In the course of the debate the Lord President of the Council, Lord Woolton, made the following official statement on behalf of the Government; at the same time Mr. Butler read the statement in the House of Commons: "The Government consider that a most important means of increasing productivity in industry is to improve facilities for higher technological education. They are convinced that this can best be done by building up at least one institution of university rank devoted predominantly to the teaching and study of the various forms of technology. We are, therefore, urgently exploring the practical possibilities as to the best way of doing this.

"The Government fully recognizes the important contribution which technical colleges could make to higher technological education. Details of our proposals for making improved financial assistance available for selected colleges and courses therein will be announced shortly by the Minister of Education. We do not, however, propose to establish a non-teaching, award-making body under the title of the Royal College of Technology."

The reference to increased financial assistance to selected technical colleges will be most warmly welcomed by those who have been in agreement with the Institute's statements of policy for higher technological education. [*The Education and Training of Technologists:* also *Bulletin* (December 1950).]

Handbook and Regulations concerning Membership

A completely new edition of the Institute's handbook, included in which are the full regulations governing membership, has been prepared and copies are now available, gratis, on request. The handbook contains reproductions of some excellent photographs of the Institute's House which have been taken specially for this purpose by Miss M. F. Harker, F.I.B.P., F.R.P.S. New members, in particular, may like to have copies. The Secretary will be glad to send copies to any interested physicists whose names and addresses are sent by members.

List of Meetings

For some years prior to 1950, half-sessional lists of meetings were issued, as small booklets, to all members. Following a recommendation made by the recent conference of Branch and Group honorary officers, the publication of such booklets is to be recommenced. Copies of the complete list of meetings to be held between September 1952 and the end of January 1953 will be circulated to all members in September.

Meetings of the Board

The Board met on 20th March and 15th May last, the President, Professor W. E. Curtis, being in the Chair on both occasions. The items dealt with, other than confidential or formal business, are reported in this issue of the BULLETIN or have been referred to in earlier issues.

Technical and Scientific Register: Recognition of Graduateship

The regulations of the Technical and Scientific Register of the Ministry of Labour and National Service have hitherto limited the recognition and admission of physicists to those holding university degrees. The Institute's Graduateship examination has been formally recognized by the Ministry and successful candidates at the examination who are subsequently elected to Graduateship will be eligible to place their names on the Register as qualified physicists. Fellowship and Associateship of the Institute are, of course, also recognized by the Ministry as qualifications entitling their holders to admission to the Register whether or not they hold a university degree.

1953 Convention

The Board has accepted the recommendation of the Honorary Officers' Conference concerning the preliminary arrangements for the Convention of the Institute to be held in 1953. The venue of the convention will be Bournemouth and the dates 27, 28, 29, May 1953. This is the week following Whitsun; the Coronation is on 2nd June. It is expected that the number of members, their ladies and guests who will attend will be over five hundred. A scientific programme of wide interest will be arranged together with social functions and visits. As at Buxton, the Institute will arrange for the booking of hotel accommodation and full details will be circulated later. The convention is to be organized by a committee, under the chairmanship of Dr. B. P. Dudding, consisting of a representative of each home branch and each group.

Conference on Particle Size Analysis

The Board has agreed to the organization by the Institute of a three-day conference to be held in April 1954 on "Particle size analysis in the range 1 mm–0·1μ." Mr. R. L. Brown (Fellow) has agreed to act as secretary of the conference and an organizing committee has been set up.

Training of Radiographers

The City and Guilds of London Institute has set up, at the Board's suggestion, an Exploratory Committee to consider courses of training in industrial radiology. The Board has been asked to nominate three representatives to this committee and it has appointed the following three Fellows: Mr. W. E. Schall, Mr. F. Y. Poynton and Mr. N. Clarke.

Protection against radiation used in Industrial Radiology

On the recommendation of the Committee of the Industrial Radiology Group, the Board has sent a letter to the Chief Inspector of Factories with recommendations concerning regulations governing protection provided for workers against radiation used in industrial radiology.

APPOINTMENTS VACANT

The inclusion of particulars of a vacancy must not be taken to imply that the Institute necessarily approves of the terms offered or that might be offered. Candidates should satisfy themselves that these are satisfactory, and they may always refer to the Institute for advice.

Applications are invited for appointment to a **Junior Lectureship in Physics** at **Auckland University College** (University of New Zealand). The salary attached to the position will be £575 × £50 —£675 per annum; the appointment will be for a period of four years. The successful applicant will be expected to take up his duties on 1 February, 1953, or as soon thereafter as may be arranged. Further particulars and information as to the method of application should be obtained from the Secretary, Association of Universities of the British Commonwealth, 5 Gordon Square, London, W.C.1.

Physicist required by **The British Iron and Steel Research Association** for research on methods of measurement and control of metallurgical furnaces. Applicants should be between 21 and 25 years of age, should have a university degree in physics or equivalent qualification, and an interest in experimental work on plant in actual operation. Location of work: Sheffield. Salary will be according to qualifications and experience, with superannuation benefits under the F.S.S.U. Written applications only to Personnel Officer, The British Iron and Steel Research Association, 11 Park Lane, London, W.1.

Applications are invited by the **Ministry of Supply** for an appointment in the grade of **Deputy Chief Scientific Officer** to be Head of the Theoretical Physics Division at the Atomic Energy Research Establishment, Harwell, Berks. The work of the Division involves the application of physical theory and mathematical methods to a wide variety of problems. Candidates should be at least 31 years of age and persons of established reputation in their field of study and be capable of directing the work of a large team of theoretical physicists. Salary will be assessed according to the qualifications and experience of the selected candidate within the inclusive range £1,775 to £2,050 p.a. (male). The post is unestablished but carries F.S.S.U. benefits. Favourable housing prospects exist for the selected candidate if married. Application forms obtainable from Ministry of Labour and National Service, Technical and Scientific Register (k), Almack House, 26–28 King Street, London, S.W.1, quoting A 179/52A. Closing date 24 July, 1952.

The Nelson Research Laboratories, **English Electric Co. Ltd.**, Stafford, have a vacancy for a **Physicist** to work on magnetic properties of materials chiefly in connection with the application of the latest ideas to soft ferromagnetics. Applicants should have had post-graduate or industrial research experience. Please write giving full details and quoting reference 310 to Central Personnel Services, English Electric Co. Ltd., 24/30 Gillingham Street, London, S.W.1.

Editorial Assistant required by well-known technical journal with offices in West End of London. The appointment offers excellent opportunities to a young man or woman, preferably a graduate (chemistry, physics, engineering or fuel technology) seeking experience in technical journalism. Applications, stating age, education, experience and salary required, to Box No. A.V.25, The Institute of Physics, 47 Belgrave Square, London, S.W.1.

Part-time courses of postgraduate lectures in biophysics and medical physics will be given in the Physics Department of the **Royal Cancer Hospital** during the session 1952–53, starting October 6, 1952. Particulars can be obtained on application to the Director of the Physics Department.

National Coal Board—There are a number of vacancies for scientists at the Central Research Establishment II, which has just been opened at Isleworth, London. The Establishment will be devoted to research on the underground problems of the industry. Applications are invited from persons holding good university degrees or equivalent qualifications in physics, mathematics, engineering, chemistry, metallurgy and other subjects.

Successful applicants will be appointed, according to qualifications and experience, as:—

Scientist Grade I—(salary scale £1,095 × £35—£1,305, thereafter on a range of £1,495, plus London Location Allowance of £78 at the minimum rising to £100 at the maximum).

Scientist Grade II—(salary scale £645 × £30—£1,095, plus London Location Allowance of £46 at the minimum rising to £78 at the maximum).

Scientist Grade III—(salary scale £445 × £25—£845, plus London Location Allowance of £32 10s. 0d. at the minimum rising to £58 at the maximum). After three years' satisfactory post-graduate experience, Scientists Grade III are considered for promotion to Grade II.

The posts are superannuable. The selected applicants will be required to join either the Board's Superannuation Scheme for Scientists, which is drawn on lines broadly comparable with those of the F.S.S.U., or their Principal Superannuation Scheme.

Apply in writing, giving full particulars (in chronological order) of age, education, qualifications and experience (with dates) to National Coal Board, Establishments (Personnel), Hobart House, Grosvenor Place, London, S.W.1, marking envelope TT/479. Original testimonials should *not* be forwarded. Closing date 24 July, 1952.

Principal Scientific Officer, R.A.F. Acoustics Laboratory. The Civil Service Commissioners invite applications from men for a permanent post in London under the Air Ministry.

Candidates must have been born on or before the 31 December, 1920. They must possess a first- or second-class honours degree in physics and have some knowledge of electro acoustics and electronics, with experience in the planning of research. They should have an interest in the application of physics to medical problems arising from research on hearing, and should be familiar with statistical procedures.

Inclusive salary scale £1,075–£1,459. Starting salary will be determined on an assessment of the successful candidate's qualifications and experience. Superannuation provision within the Federated Superannuation System for universities.

Particulars and application forms from Civil Service Commission, Scientific Branch, Trinidad House, Old Burlington Street, London, W.1, quoting No. S4151/52; completed application forms must be returned by 24 July, 1952.

Mathematicians and Physicists with a special interest in theoretical problems are required by the **English Electric Co. Ltd.**, for their Luton establishment. Applications are invited from senior men with Honours Degree and Industrial experience, and Graduates (male and female) who have recently left University. Please write, giving full details of qualifications and experience and quoting reference 441H, to Central Personnel Services, 24–30, Gillingham Street, London, S.W.1.

Nelson Research Laboratories, English Electric Co., Ltd., Stafford, will shortly have a vacancy for a **graduate physicist** or **metallurgist** with some experience of X-ray defraction techniques for work in their Metallurgical Laboratory. Please write, giving full details of qualifications and experience and quoting reference 996, to Central Personnel Services, 24–30, Gillingham Street, London, S.W.1.

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